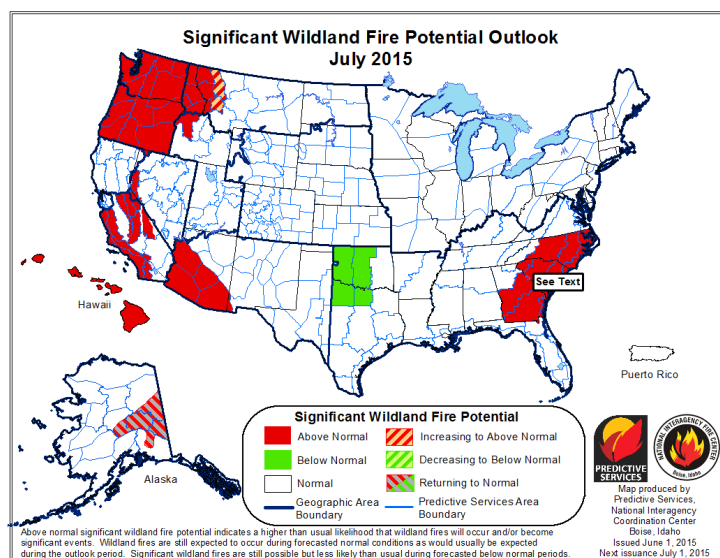


TETON INTERAGENCY FIRE 2015 WILDLAND FIRE OUTLOOK

June 9, 2015



Significant Wildland Fire Potential for July 2015 (issued June 1, 2015).
<http://www.predictiveservices.nifc.gov/outlooks/outlooks.htm>

SUMMARY

The winter season was dominated by variable dry and wet months and warmer than normal temperatures, a reflection in part of weak El Niño/Southern Oscillation (ENSO) conditions. This pattern featured:

- Five months with below normal precipitation and three months above normal precipitation (at Moose WY weather station), which averages for a normal year-to-date precipitation.
- For the Teton climate division (Wyoming Division 2), the past eight months (October-May) were the third warmest recorded over a 120-year record, at 3.7°F (2°C) above the 20th century average.
- For this same period, precipitation was 41st driest of 120 years.
- May was the 12th wettest of the past 120-year period.
- Despite the wet May, we begin the season with Abnormally Dry conditions on the U.S. Drought Monitor.

Regional outlooks indicate below-normal fire activity for early to mid summer, with normal fire activity in mid-to late-season. The continuing weak El Niño conditions may limit high-pressure ridge formation (typically warm and dry) and support wet convection thunderstorms in late July-August, followed by normal or drier September conditions.

During an average season, Bridger-Teton National Forest will have 67 fires for 3290 acres and Grand Teton National Park will have 12 fires for 789 acres.

CLIMATE AND FUELS OUTLOOK

(1) Area Snowpack and Streamflow

Snowpack, accumulated precipitation, and streamflow in western Wyoming tracked in the normal to slightly below-normal ranges, with early snowmelt reflecting a warmer than normal winter.

Table 1: Percent of Average Snow Water Content and Precipitation by Basin, June 8, 2015
(<http://www.wrcc.dri.edu/snotelanom/basinswe.html>). *=Analysis may not provide valid measure of conditions.

	Snow Water Content	Total Precipitation (Water YTD)
Snake River	38 % *	85 %
Upper Green River	155 % *	95 %
Yellowstone	74 %	98 %
Wind River	114 % *	102 %

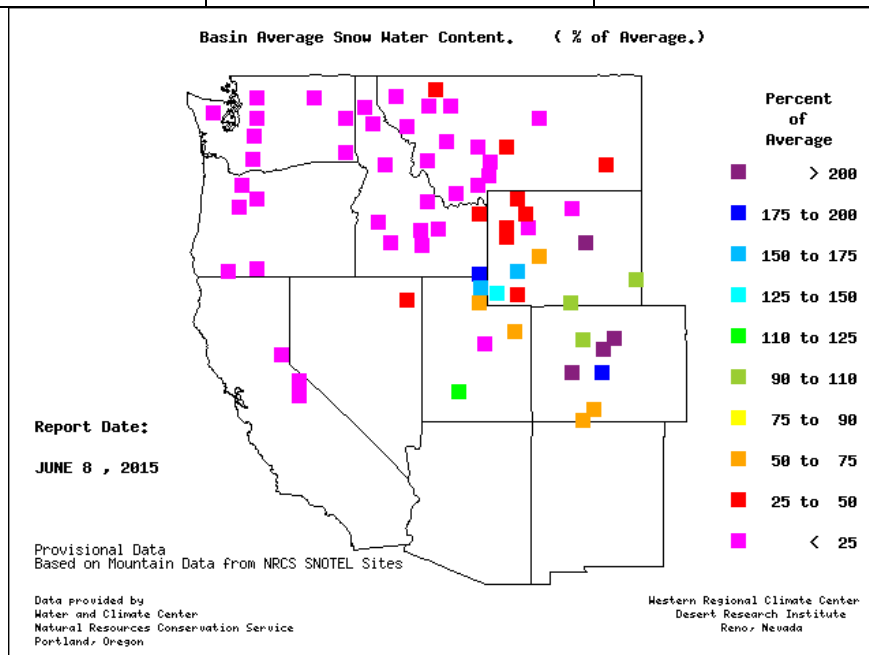


Figure 1a: [Basin - Percent of Average - Snow Water Content](#)

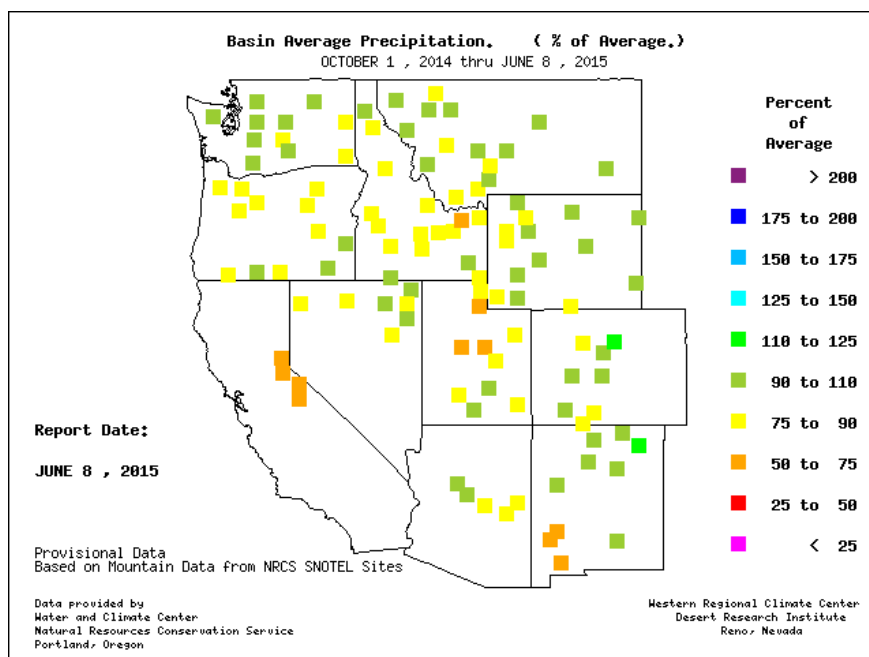


Figure 1b: [Basin - Percent of Average - Precipitation](#)

Figures 1 c-e. SNOTEL Water Year to Date, Snow Water Equivalent for Grassy Lake and Base Camp (North Zone), Elkhart Park Guard Station (East Zone), and Snider Basin (West Zone). Three of four key sites received less snow-water-equivalent moisture, melted out earlier than normal, and lower-than-normal year-to-date precipitation. <http://www.wcc.nrcs.usda.gov/snotel/Wyoming/wyoming.html>.

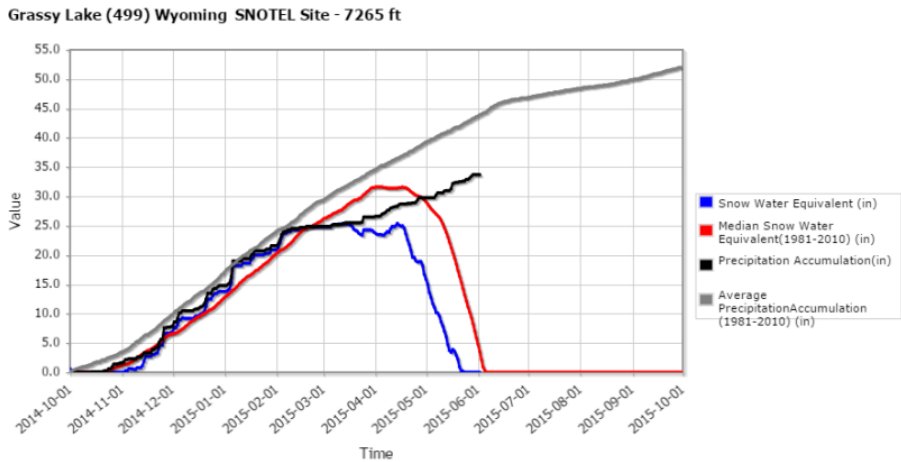


Figure 1c: Grassy Lake Snotel

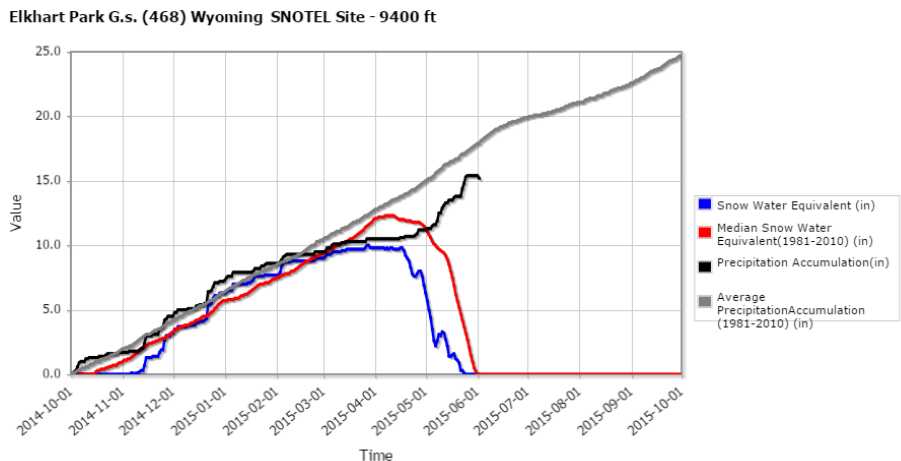


Figure 1d: Elkhart Snotel

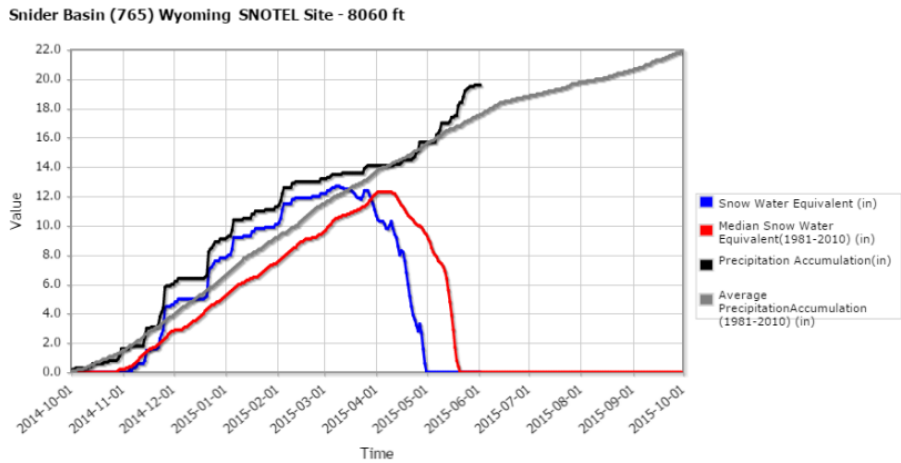


Figure 1e: Snider Basin Snotel

(2) Year-to-Date Precipitation for Area Weather Stations

Area precipitation for the water year to date (October through May) reflects extremes in variability – from 37% normal for October to 204% for May at the [Moose weather station](#), which is representative for lower elevation sites in Grand Teton National Park and some North Zone sites. Five of the last nine months recorded below-normal precipitation and three above-normal, which equates to a near normal year-to-date precipitation of 102%. This alternating dry-wet-dry-wet pattern tracks similarly to the 2003-2004 water year (Table 2 and graph). Area-wide moisture tracking (Figure 2) captures the variety of moisture impacts for the entire Teton Interagency zone, with cumulative moisture ranging from above-normal to normal to below-normal. Additional references document trends in snowpack, precipitation, and a weak El Nino (Figure 4).

Table 2 and Graph: Precipitation at Moose Weather Station (Grand Teton National Park).

		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	YTD total
Monthly Precipitation (inches)	1987-88	0.09	1.27	2.59	2.37	0.75	0.99	1.12	1.61	10.79
	1999-00	0.08	0.67	2.03	2.27	5.04	1.03	0.4	1.38	12.9
	2003-04	0.64	3.07	2.81	2.46	1.17	0.7	1.42	3.08	15.35
	2013-14	1.52	1.54	2.41	1.52	3.51	4.77	1.48	0.6	19.14
	<i>Normal</i>	<i>1.47</i>	<i>2.64</i>	<i>2.67</i>	<i>2.58</i>	<i>1.82</i>	<i>1.62</i>	<i>1.49</i>	<i>1.88</i>	<i>16.17</i>
	2014-15	0.54	3.55	3.26	2.31	1.57	0.67	0.8	3.83	16.53
Percent of NORMAL	1987-88	6%	60%	102%	92%	40%	63%	75%	84%	70%
	1999-00	6%	32%	80%	88%	267%	66%	27%	72%	83%
	2003-04	44%	116%	105%	95%	64%	43%	95%	164%	95%
	2013-14	103%	58%	90%	59%	193%	294%	99%	32%	118%
	2014-15	37%	134%	122%	90%	86%	41%	54%	204%	102%

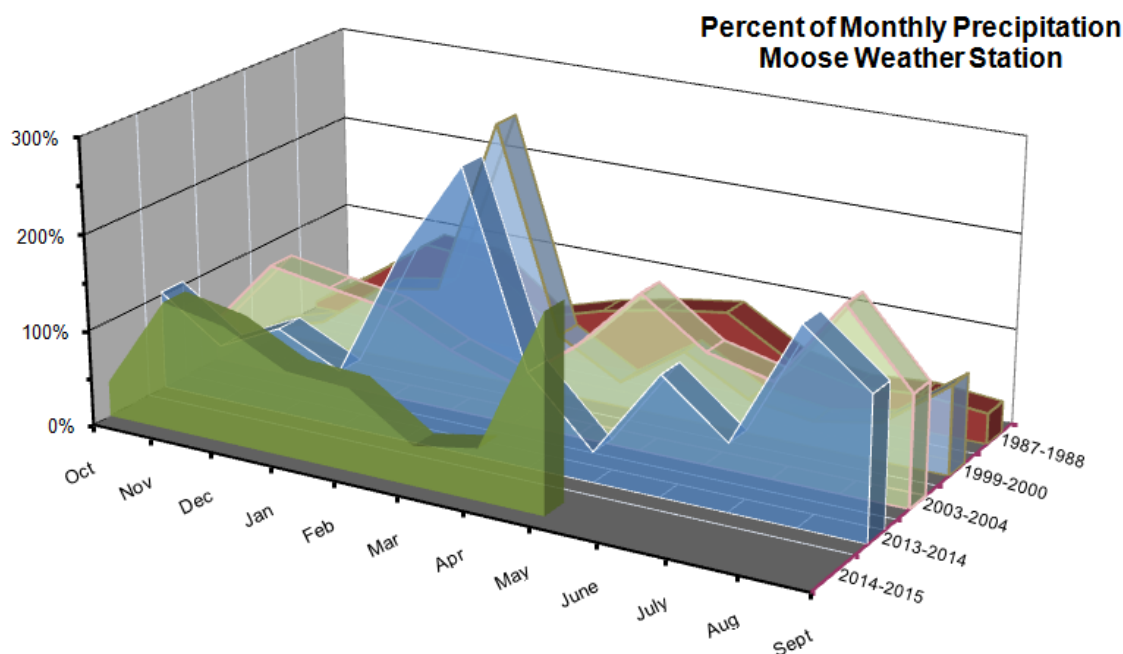
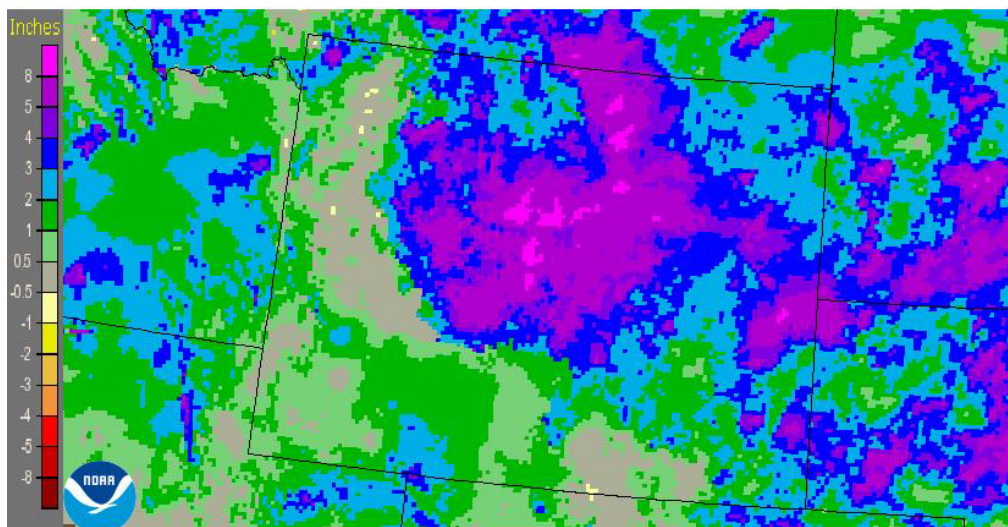


Figure 2. Wyoming, Current Precipitation – Departure from Normal -- for the past 30 days (ending June 9, 2015), Western Wyoming exhibits a range of normal to above-normal rainfall, compared to normal for this period. Central and eastern Wyoming received significant spring rainfall (from 4-8+ inches above normal for the past 30 days).

<http://water.weather.gov/precip/>.

Wyoming: Current 30-Day Departure from Normal Precipitation
Valid at 6/9/2015 1200 UTC- Created 6/10/15 13:49 UTC



(3) Drought Monitor

The current drought map for the U.S. West shows 75% of the West in same stage of drought conditions. In Wyoming, 28% of the state is abnormally dry, compared to 3% at this date last year.

U.S. Drought Monitor West

June 2, 2015

(Released Thursday, Jun. 4, 2015)

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	25.23	74.77	56.98	35.92	17.99	7.94
Last Week 5/26/2015	25.37	74.63	57.03	35.92	17.59	7.94
3 Months Ago 3/9/2015	29.95	70.05	59.79	29.48	16.62	7.04
Start of Calendar Year 1/2/2015	34.76	65.24	54.48	33.50	18.68	5.40
Start of Water Year 9/5/2014	31.48	68.52	55.57	35.65	19.95	8.90
One Year Ago 6/2/2014	31.84	68.16	60.32	47.21	20.20	4.31

Intensity:

D0 Abnormally Dry D1 Moderate Drought D2 Severe Drought D3 Extreme Drought D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:

David Miskus
NOAA/NWS/NCEP/CPC



<http://droughtmonitor.unl.edu/>

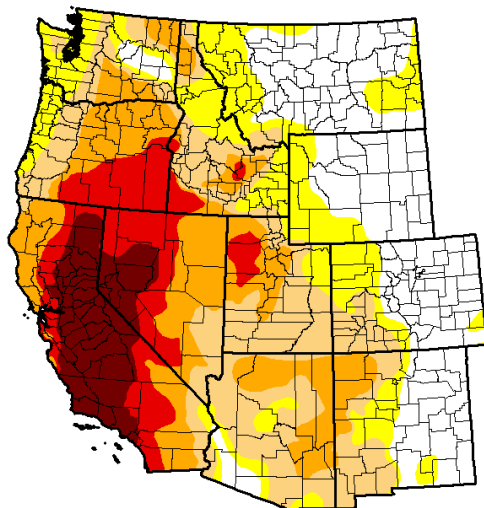
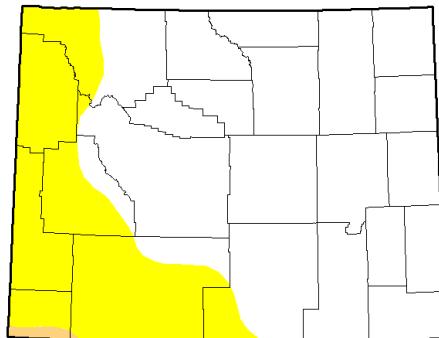


Figure 3a. U.S. Drought Monitor – West.

<http://droughtmonitor.unl.edu/Home/RegionalDroughtMonitor.aspx?west>

U.S. Drought Monitor Wyoming

June 2, 2015
(Released Thursday, Jun. 4, 2015)
Valid 7 a.m. EST



	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	72.21	27.79	0.54	0.00	0.00	0.00
Last Week 5/26/2015	71.71	28.29	0.54	0.00	0.00	0.00
3 Months Ago 3/2/2015	84.54	15.46	7.31	0.00	0.00	0.00
Start of Calendar Year 1/2/2014	97.56	2.44	0.00	0.00	0.00	0.00
Start of Water Year 9/30/2014	97.56	2.44	0.00	0.00	0.00	0.00
One Year Ago 6/2/2014	97.17	2.83	0.00	0.00	0.00	0.00

Intensity
 D0 Abnormally Dry
 D1 Moderate Drought
 D2 Severe Drought
 D3 Extreme Drought
 D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
David Miskus
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<http://droughtmonitor.unl.edu/>

Figure 3b. U.S. Drought Monitor – Wyoming.

<http://droughtmonitor.unl.edu/Home/StateDroughtMonitor.aspx?WY>

(4) Oceanic Nino Index

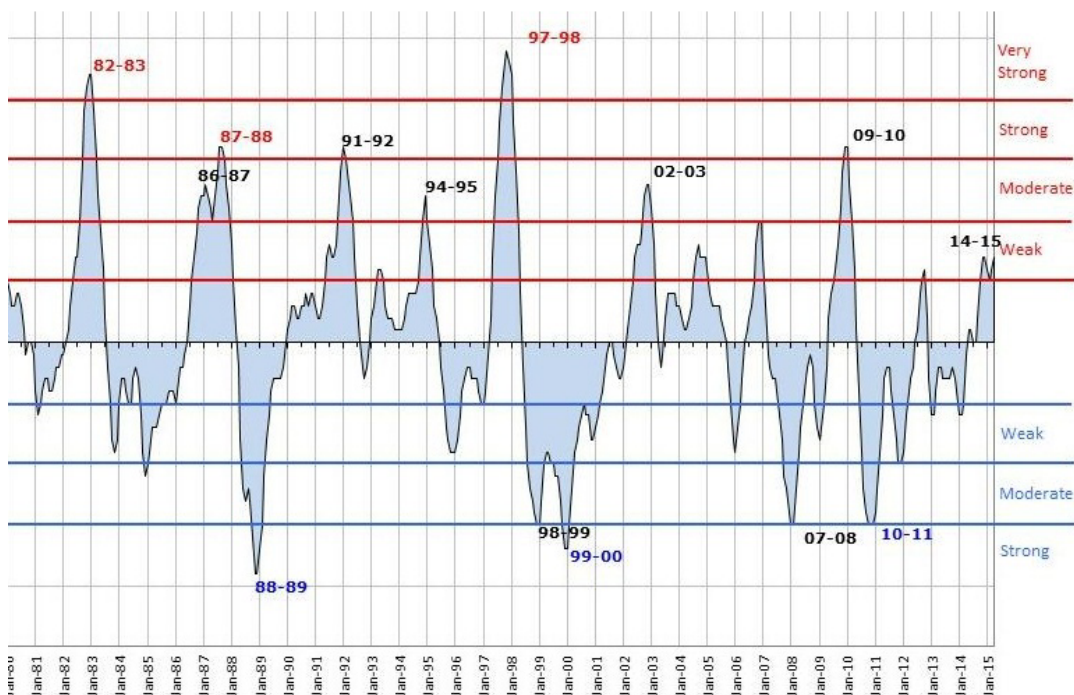


Figure 4. Oceanic Nino Indicator (cropped), indicating weak El Niño conditions, similar to the 2003-2004 water year. <http://ggweather.com/enso/oni.htm>.

(5) Fuel Moisture

Fuel moisture sampling of live and dead fuels began in mid-May in low-elevation sites and by June 1 at high elevation sites in Grand Teton National Park. Green-up was normal, though many sites are exhibiting increased moisture due to twice the normal rainfall for May. Live woody moistures in forest shrubs and sagebrush are wetter than average, but live-woody conifer moistures are at or below average. 1000-hour fuel moistures at conifer sites are at or slightly above average.

(6) Long-term Temperature and Precipitation Outlook

Outlooks from the Climate Prediction Center reflect expectations for a continuing weak El Niño conditions into the summer, with potential impacts on the US West. The 30- and 90-day outlooks incorporate these warmer El Niño conditions. The 30-day outlook calls for normal probability for normal temperatures and wetter-than-normal, while the 90-day outlook posts probabilities for warmer and wetter than normal conditions (<http://www.cpc.ncep.noaa.gov/products/predictions/90day/>).

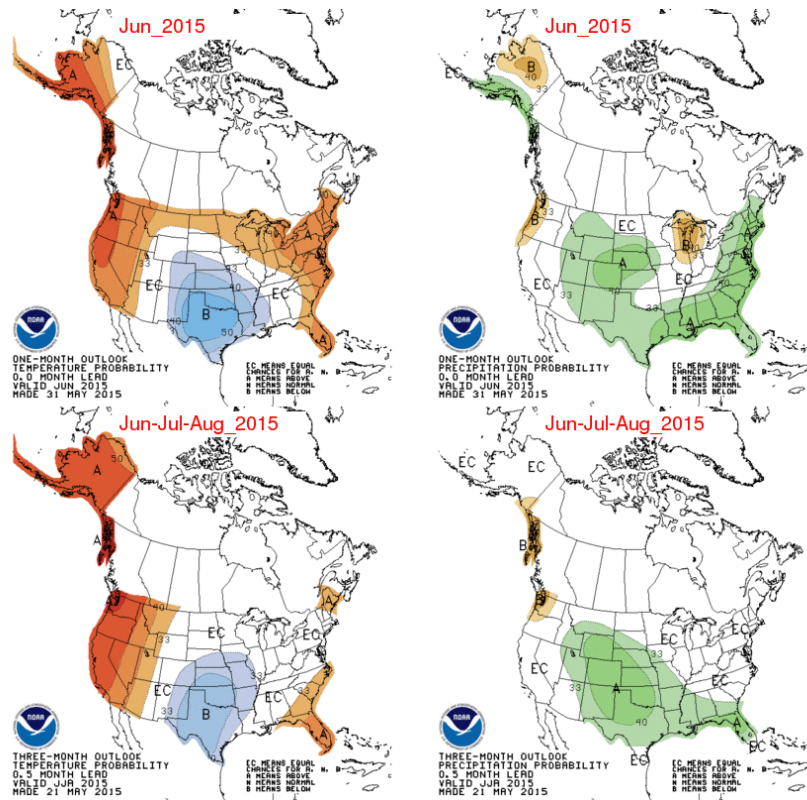


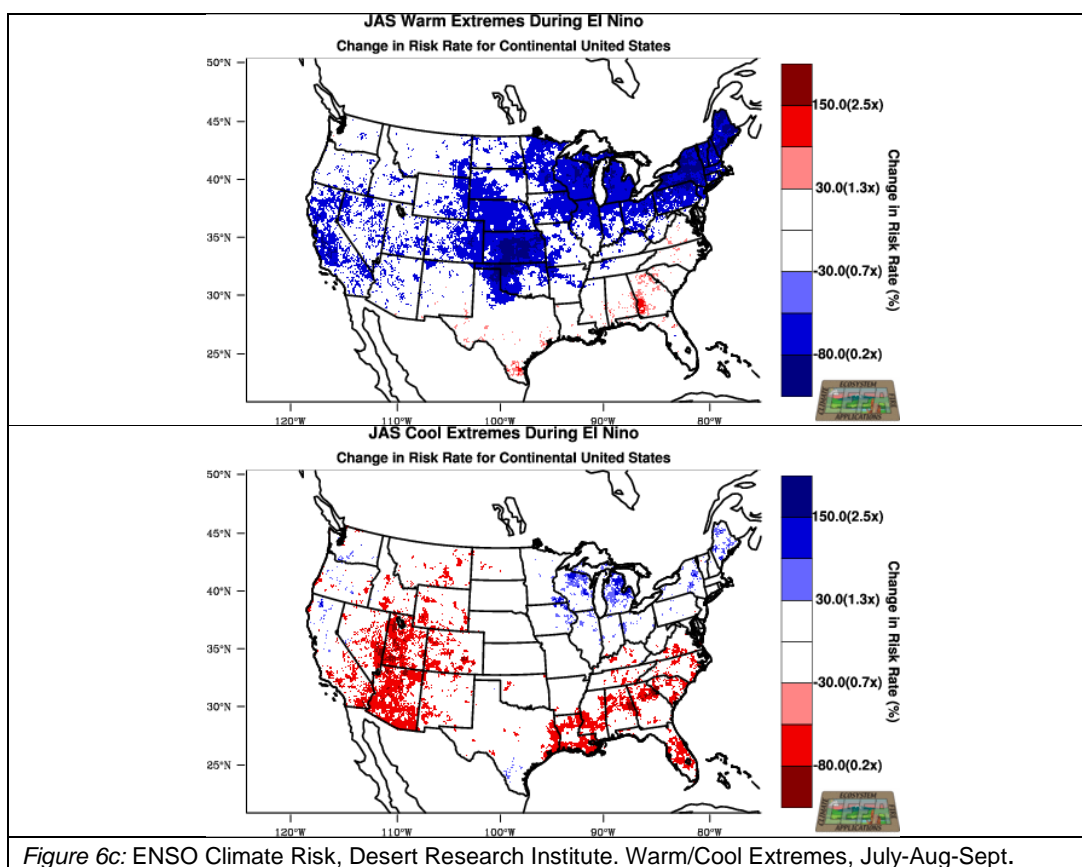
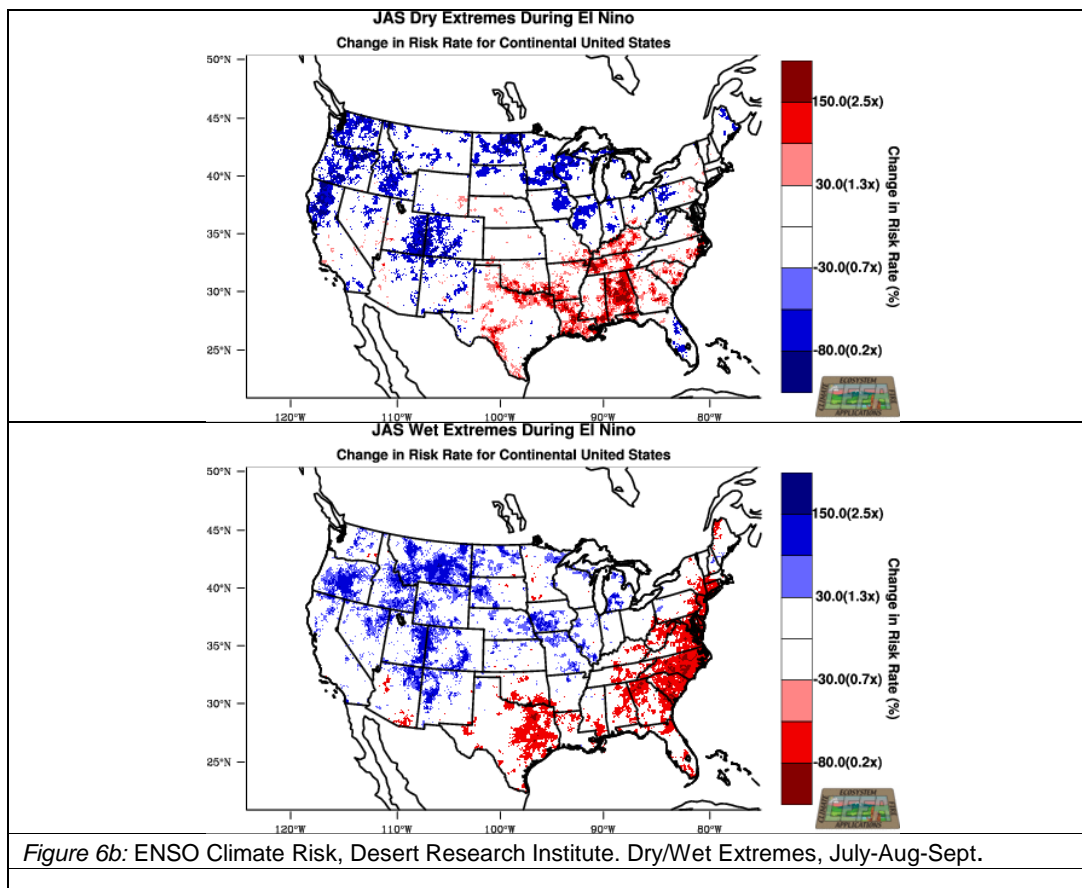
Figure 6a: June and June through August, 30- and 90-day Outlook.

Warmer El Niño conditions in the Pacific Ocean in prior years have been correlated with national and regional fire activity. A series of monthly and seasonal risk assessment maps from the Desert Research Institute (Figure 6b & 6c, and <http://www.wrcc.dri.edu/enso/ensorisk/index.html>) offer one of the clearest visual analyses of the changing risk. For Wyoming, the ENSO Climate Risk maps indicate an increased risk of “wet extremes” and decreased risk of “dry extremes” for July-August-September, and a lesser risk for cool extremes and a normal risk for warm extremes. For additional ENSO background, see http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/lanina/enso_evolution-status-fcsts-web.pdf.

Links to analyses:

<http://www.wrcc.dri.edu/enso/ensorisk/elnino/temp/jas/index.html>

<http://www.wrcc.dri.edu/enso/ensorisk/elnino/precip/jas/index.html>



GEOGRAPHIC AREA OUTLOOKS

The Teton Area fire zone is within the Great Basin Geographic Area (new this year, via a merger of the Eastern and Western Great Basin geographic areas). Fire seasons in our zone also track with similar conditions in adjacent areas within the Rocky Mountain and Northern Rockies geographic areas, which converge within the Greater Yellowstone Area (GYA) and share common trends of fire activity. The season outlooks excerpted below support an outlook for normal fire activity in the Teton Interagency Dispatch zone and neighboring units, with potential for above-normal fire activity in western areas of the Great Basin geographic area. Weak El Niño conditions tend to mute the formation of dry and hot upper-level ridges and support a flow of wet summer convection from the northwest in July and August, with normal drying trend in September.

Excerpts of National and Regional Outlooks from “National Wildland Significant Fire Potential Outlook” (June 1, 2015, NIFC Predictive Services). http://www.nifc.gov/nicc/predictive/outlooks/monthly_seasonal_outlook.pdf.

National: The focus of above normal fire activity during the core of fire season will likely be in the Northwest. In the shorter term, however, late spring storms bringing increased live and dead fuel moistures and on-going green up will lead to only normal fire activity in June. As fuels dry in June expect increases in fire activity and the potential for robust above normal fire occurrence in July, August and September. This will be amplified by the lack of snowpack at higher elevations which should allow the conditions necessary for long duration timber fires to occur unusually early. The wet pattern experienced throughout much of the West has had a significant impact on the development of fire season for the Great Basin. Fuel conditions once expected to be dry will likely begin more moist than anticipated. This will likely lead to normal development of fire season, except possibly on the Sierra Front and across parts of the Idaho mountains. The finer fuels of the Great Basin will dry as expected, though occasional moisture inputs will provide some periodic relief during season. The fuel regime of the Great Basin lends itself extremely well to ebbs and flows of significant fire activity depending on short-term wind and dryness. Fuels in many areas are continuous enough to support large fires and occasional significant fire outbreaks are likely whenever forecasts indicate the combination of wind and drying.

Great Basin: Above normal fire potential is expected along the Sierra Front and the mountains of west-central Idaho beginning in July and continuing through mid-September. Otherwise, significant wildland fire potential will be normal for the outlook period. May was a wet and cool month across much of the region thanks to a more active weather pattern moving into the western U.S. Average temperatures were below normal over Nevada and Utah with slightly warmer-than-normal temperatures over Idaho and western Wyoming. Precipitation was 200 to 600 percent above normal over much of the area. Many storms were on the cold side bringing high elevation snow, increasing the snowpack over April totals across Utah and western Wyoming. Precipitation since October 1 remains below normal across most of the Great Basin but has increased slightly with recent precipitation.

Seasonal, warmer temperatures will return to the region for June, with periods of dryness followed by possible showers through at least the first part of the month. July looks to be on the wetter side for Utah and eastern Idaho as southerly moisture moves northward with possibly some dryness returning for August. Developing El Niño conditions would support the potential for wetter conditions over southern and eastern areas of the Great Basin. Northern and western portions of the area including western Nevada and western Idaho may be on the periphery of the deeper moisture in July and could remain dry. No significant increase in fire potential is expected through the first part of June as grasses and brush will need time to cure.

Strong wind events could still pose a problem in areas dominated by cured cheat grass, especially across the far south. The Sierra Front and the mountains of west central Idaho remain the areas of concern going into this fire season, but will likely not see an increase in fire potential until the July-August timeframe. Other areas in the northern half of the Great Basin will be closely monitored as an extended dry period in July or August could create above normal fire potential.

CURRENT FIRE ACTIVITY

Fire Activity: Teton Interagency Dispatch Center

Early season wildland fire activity is trending comparable to other years with wet springs, with slightly more acres than in recent years.

Table 2: Year-to-Date Fire Activity (Unplanned Ignitions).

	Bridger-Teton National Forest		Grand Teton National Park	
	Fires	Total Acres	Fires	Total Acres
June 5, 2007	2	5.1	1	0.1
June 1, 2008	1	0.1	0	0
June 1, 2009	1	0.1	0	0
June 1, 2010	4	0.4	0	0
June 1, 2011	1	5.0	0	0
May 25, 2012	2	0.35	1	0.1
June 1, 2013	1	0.1	0	0
June 1, 2014	3	0.3	0	0
40-year AVERAGE (to June 1)	1.5	8.1	0.4	1.0
Year-to-Date to June 8, 2015	5	7.8	0	0

For further information, contact: **Ron Steffens**

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* * *

Selected Sources

- Precipitation Tracking: <http://water.weather.gov/precip/>.
- Snow / Snotel Tracking: <http://www.wcc.nrcs.usda.gov/snotel/Wyoming/wyoming.html>
- Climate Prediction Center, Three-Month Outlooks: <http://www.cpc.ncep.noaa.gov/products/predictions/90day/>
- Regional outlooks from “National Wildland Significant Fire Potential Outlook” (June 1, 2015, NIFC Predictive Services): http://www.nifc.gov/nicc/predictive/outlooks/monthly_seasonal_outlook.pdf.
- Great Basin Predictive Services/Outlooks: <http://gacc.nifc.gov/gbcc/outlooks.php>.
- Teton Interagency Fire and Dispatch Center: <http://www.tetonfires.com>.